Evaluating the NIST Laboratories: OMB and the PART

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OMB's Program Assessment Rating Tool (PART): Purpose

- Context: President's Management Agenda, budget and performance integration
- Purpose: ensuring taxpayer value, linking budget decisions to performance
  - "The PART seeks to answer whether a program is demonstrating value to the taxpayer. In doing so, the PART sets a standard for performance information that is high but also basic and compelling. Ideally, it seeks to demonstrate that a program 1) has a track record of results and 2) warrants continued or additional resources." [OMB Guidance, June 2003]

Structure of the PART

- Rate, explain, and provide evidence in four evaluation areas, each with different weights
  - Program Purpose and Design: 20%
  - Strategic Planning: 10%
  - Program Management: 20%
  - Program Results: 50%
- Binary scoring
- 28 questions with extensive guidance

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Issues with the PART

- PART instrument new and controversial
  - One size fits all evaluation
  - Mixes policy assessment with program evaluation
  - Scoring method crude, and guidance often unclear
  - Inconsistent use by OMB Examiners
- Unclear linkage to budget
  - "Effective programs averaged 6% budget increase; programs not showing results averaged less than 1%." (Performance Institute)
  - Cause, correlation, or neither?

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First Year PART Results, Government-wide

- 234 Federal programs were evaluated in 2002—two of those from NIST
  - Initial focus on Federal programs with possible performance problems
  - Average score of 60 across all evaluated programs
  - Only 20 (9%) scored 80 or above
  - "More than half of the programs … could not show results for the taxpayer's money" (Performance Institute)
- Results published with FY 2004 budget

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Selected FY 2004 PART Results

Agency	Program	Weighted Total	Purpose	Planning	Manage-ment	Results	$m
NASA	Mars Exploration	93	100	89	100	89	$457
NSF	Research Tools	91	100	83	93	88	$1,112
DOC	Weather Service	89	100	85	85	87	$743
DOD	Basic Research	86	100	89	84	80	$1,334
DOC	PTO--trademarks	82	100	83	100	67	$141
NSF	Geosciences	81	100	70	88	73	$609
DOE	Solar Energy	78	100	89	80	67	$88
DOC	Econ. Dev. Admin	76	60	100	100	67	$366
DOC	**NIST MEP**	**75**	**40**	**86**	**91**	**80**	**$107**
DOD	Missle Defense	75	100	88	90	56	$7,772
NASA	Space Shuttle	72	80	33	64	80	$3,270
DOC	**NIST ATP**	**66**	**20**	**86**	**100**	**67**	**$184**
DOE	Hydrogen Tech	64	100	89	70	42	$29
DOE	Basic Energy Sci	63	100	67	82	40	$997
DOE	Building Tech	62	100	67	70	42	$66
HHS	Ctr. Biolog Eval & Res	61	100	86	77	33	$176
DOE	Fuel Cells	58	83	67	73	40	$58
NASA	Space Station	58	80	78	73	39	$1,721
SBA	Sm Bus Dev Ctrs	56	80	57	89	33	$88
DOC	PTO--patents	55	80	83	86	27	$985
DOC	Nt'l Marine Fisheries	55	80	100	46	39	$603
DOE	High Energy Physics	55	100	67	82	23	$713
DOE	Environ. Mgmt R&D	53	100	75	64	25	$247
DOL	Trade Adjustmt Assist	53	60	71	86	33	$41
DOJ	Cybercrime	41	100	14	57	17	$82
DOJ	DEA	26	90	14	34	0	$1,482
VA	Compensation	15	20	0	57	0	$23,375

New Evaluation: NIST Labs (FY 05)

Program Assessment Rating Tool (PART) Summary			
NIST Laboratories			
Section	**OMB Weighting**	**Score**	**Weighted Score**
Program Purpose & Design	20%	100%	20%
Strategic Planning	10%	100%	10%
Program Management	20%	86%	17%
Program Results	50%	75%	38%
Total Program Score	**100%**		**85%**

ADMINISTRATIVELY RESTRICTED DATA

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Why Not 100%?

Two questions rated "no" by OMB:

1. Management: Does the program have procedures to measure and achieve efficiencies and cost effectiveness in program execution?
2. Results: Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?

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NIST Labs: Program Purpose

- Strength: Long-standing mission; clear and legitimate Federal role
- Issue discussed: Role differentiation
  - Mission creep: Conducting basic R&D that is not directly related to measurements and standard mission
  - Substitutability: Could universities provide equivalent R&D more "efficiently"?

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NIST Labs: Strategic Planning

- Strength: Long-term strategic plan; organizational alignment and accountability
- Issue discussed: Evaluation of progress to plan
  - Recommendation: Role of VCAT should be more systematic
  - Recommendation: Re-introduce NMI benchmarking to indicate relative strengths
- Issue: Characterization of long-term goals
  - Recommendation: Move Homeland Security from top-level goal to key strategy
  - Recommendation: Re-phrase research goal

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NIST Labs: Program Management

- Strength: Sound program and financial management overall
- Issue: Measuring programmatic efficiency
  - "A Yes would require that the program's performance plans include efficiency measures and targets, such as per-unit cost of outputs, timing targets, and other indicators of efficient and productive processes... A de-layered management structure that empowers front line managers and that has undergone competitive sourcing (if necessary) would also contribute to a Yes answer."
  - NIST-wide efficiency metrics not reported; competitive sourcing in process

NIST Labs: Program Results

- Strength: Systematic, extensive use of peer review; mix of measurement methods
- Issue: Quantifiable output metrics
  - Recommendation: Where possible, use measures that indicate level of use or quality
- Issue: Efficiency metrics
  - "Efficiency improvements should generally be measured in terms of dollars or time"
  - Recommendation: Find something that works

DRAFT: NOT FOR DISTRIBUTION

NIST Labs: Long-term goals, annual objectives, and performance evaluation

STRATEGY		EVALUATION	
Long-term goal	**Annual objectives**	**Evaluation method**	**Metrics**
Provide technical leadership for the Nation's measurement and standards infrastructure	Progress to plan in Strategic Focus Areas for emerging science and technology-intensive industries	External Advisory Committee (VCAT) evaluation	Satisfactory / unsatisfactory in each SFA area
	Maintain world class measurement research and measurement capabilities	NRC peer review of technical quality and merit	Qualitative analysis and report, with a focus on NIST's responsiveness to prior year findings
		NMI benchmarking data	Best in the world / state of the art / not state of the art
	Disseminate high value research results	Citation analysis	Above average "impact ratio" (citation frequency of NIST-authored publications exceeds ISI baseline)
		Publication volume	Number of technical publications in peer reviewed journals
Assure the availability and efficient transfer of measurement and standards capabilities essential to established industries	Transfer high value measurement methods, data, and technologies to customers	Quantitative indicators of measurement transfer	Web access to / downloads of NIST-maintained databases
			Number of items calibrated
			Number of reference materials sold
	Maintain high-impact measurement and standards programs	Microeconomic impact studies	Net benefit to cost ratio; net present value; social rate of return

Actions Needed for OMB

- NIST: Work with OMB on efficiency metrics
- VCAT: Work with NIST on mechanisms for evaluating progress in refining and implementing NIST 2010
  - Immediate term: Discuss views on NIST's planning and strategic direction with OMB / OSTP
    - Mission focus; distinctive role for NIST
    - Strategic Focus Areas; strategic direction
    - Implementation and evaluation; effectiveness of program management
  - 6-9 months: Develop methods for making this review more systematic